

AF-17W

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Snow et al.

Attorney Docket No.: IGT1P073/P-229

Application No.: 09/338,286

Examiner: John M. Hotaling

Filed: June 22, 1999

Group: 3713

Title: PROCESSING PLATFORM IN A GAMING  
MACHINE

**CERTIFICATE OF MAILING**

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*Chereyce R. Brown*  
Chereyce R. Brown

**APPEAL BRIEF TRANSMITTAL  
(37 CFR 192)**

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This brief is in furtherance of the Notice of Appeal filed in this case on March 22, 2005.

This application is on behalf of

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Small Entity

☒

Large Entity

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☒ Applicant(s) hereby petition for a 2 month extension(s) of time to under 37 CFR 1.136.

If an additional extension of time is required, please consider this a petition therefor.

☐ An extension for \_\_\_\_\_ months has already been secured and the fee paid therefor of \$ \_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

☒ Applicant(s) believe that no (additional) Extension of Time is required; however, if it is determined that such an extension is required, Applicant(s) hereby petition that such an

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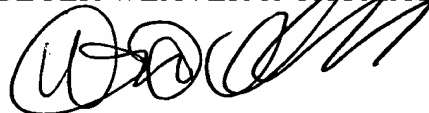
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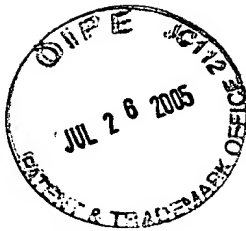
☒ Charge any additional fees or credit any overpayment to Deposit Account No. 500388, (Order No. IGT1P073). Two copies of this transmittal are enclosed.

Respectfully submitted,  
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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS**

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**EX PARTE SNOW**

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**Application for Patent**

**Filed June 22, 1999**

**Application No. 09/338,286**

**FOR:**

**Processing Platform in a Gaming Machine**

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**APPEAL BRIEF**

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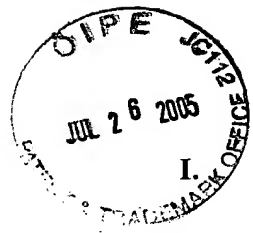
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**Attorneys for Applicants**

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## **I. REAL PARTY IN INTEREST**

The real party in interest is IGT, the assignee of the present application, having an address at 9295 Prototype Drive, Reno, Nevada 89521.

## **II. RELATED APPEALS AND INTERFERENCES**

The undersigned is not aware of any related appeals and/or interferences.

## **III. STATUS OF CLAIMS**

There are a total of 8 claims pending in this application, namely claims 10, 11, 15, 16 and 20-24. No claims have been allowed. Claim 10 is independent. Claims 11, 15, 16 and 20-24 depend directly or indirectly from independent claim 10. Claims 1-9, 12-14 and 17-19 have been canceled during prosecution.

Claims 10, 11, 15, 16 and 20, 21 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6, 071,190 (Weiss) in view of U.S. Patent no. 5, 788, 509 (Byers).

Claims 22 and 23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6, 071,190 (Weiss) in view of U.S. Patent no. 5, 788, 509 (Byers) in further view of Newtons Telecom Dictionary page 751 the UART.

All rejections of all claims are appealed in this brief. In particular, the rejections with respect to each of claims 1, 11 and 16 are appealed with respect to specific elements contained directly within each of these claims.

#### **IV. STATUS OF AMENDMENTS**

Claims rejected in the office action of December 8, 2004 have not been further amended since the rejection, the claims rejected in the office action of December 8, 2004 are attached in the Claims Appendix.

#### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

##### **Independent claim 10**

The present invention relates generally to a processing platform for operation of a gaming machine, and more particularly, to a processing platform for operation of a gaming machine that includes a general computing subsystem and a gaming processing subsystem. More specifically, the claims recite a gaming machine comprising a motherboard and a first gaming processing subsystem board connected to the motherboard via an expansion slot on the motherboard.

The motherboard can be from a common PC-type personal computer. Page 3, line 23-25, recites, "Preferably, the general computing platform or subsystem consists of a common PC-type personal computer and therefore preferably consists of a PCI type expansion card that includes bus interface 14. As is well known to a person of ordinary skill in the art, a common PC-type personal computer includes a motherboard. One aspect of the present invention provides a gaming machine comprising: 1) a housing; 2) a user input connected to the housing; 3) a display connected to the housing; and 4) a control system located within the housing (See generally, FIG. 2 and page 5, lines 5-13).

The control system comprises a processing platform with a motherboard and a gaming processing subsystem board designed to control a game played on the gaming machine. The gaming processing subsystem board is coupled to the motherboard via an expansion slot on the motherboard. The motherboard comprises: 1) a first processor; 2) a memory wherein the first processor and the memory are designed or configured to control and operate one or more of i) visual displays, ii) attraction animation features, iii) audio player feedback, iv) real-time video presentations, v) and operating system and combinations thereof; 3) one or more buses on the more on the motherboard wherein each of the one or more buses uses an interface protocol selected from a group consisting of peripheral component interconnect (PCI), industrial standard architecture (ISA), Versa Module Europa (VME), and accelerated

graphics port (AGP); and 4) one or more expansion slots for connecting a board to the buses (See generally, FIG. 1, page 3, line 16-page 4, line 23 and page 5, line 24-31)

The gaming processing subsystem comprises a first gaming processing subsystem board connected to one of the buses on the motherboard via one of the expansion slots on the motherboard. The first gaming processing subsystem board comprises 1) a second processor designed or configured to control the gaming machine and to control Input/Output to the gaming machine; 2) a non-volatile memory for storing at least payout information; 3) a data memory socket located on the first gaming processing subsystem board designed to accommodate a data prom; and 4) a bus interface for connecting the first gaming processing subsystem board to one of the buses via one of the expansion slots on the motherboard. The first gaming processing subsystem board is designed to control one or more of: i) a game play history, ii) gaming machine access, iii) user interface devices, iv) money handling devices, v) gaming machine I/O communications, v) random number generation and vi) progressive jackpot information (See Generally, FIG. 1, page 3, line 16-page 5, line 4 and page 2, lines 16-23).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

(A) Claims 10, 11, 15, 16, 21 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6, 071,190 (Weiss) in view of U.S. Patent no. 5, 788, 509 (Byers).

(B) Claims 22 and 23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6, 071,190 (Weiss) in view of U.S. Patent no. 5, 788, 509 (Byers) in further view of Newtons Telecom Dictionary page 751 the UART.

## **VII. ARGUMENT**

### **A) The rejection of claims 10, 11, 15, 16, 21 and 24 under 35 U.S.C. §103(a)**

#### **1. Independent claim 10 and dependent claims 15, 20, 21 and 24**

##### **Summary of Prior Art and Arguments**

Weiss et al. teaches a hardware architecture for computing on a gaming machine. Weiss describes two processing areas linked together: 1) a traditional gaming computing area with a main board (“motherboard”), including associated sub-boards, that is connected to a backplane and 2) a multimedia PC with a motherboard. The main board and associated sub-boards provides the “gaming” functionality for the gaming machine and are found in a traditional gaming machine. The two processing areas are linked by a Parallel Display Interface (PDI) connection and/or a serial RS-232 connection and communicate using a secure communication protocol. The PDI connection and the RS-232 connection are cable connectors that are compatible with input/output ports found on the back of a PC.

Thus, Weiss teaches a computing architecture for the gaming machine that includes two separate computers each with their own motherboards and sub-boards that communicate via parallel or serial link. This architecture is similar to linking two common desktop computers together by a serial cable. However, a common desktop PC does not include the gaming unique components that allow it to act as a casino type gaming machine.

Byers, et al describes an apparatus for adding audio connectors to a desktop computer. The computer described in Byers includes a motherboard that has a socket with an audio card mounted in the socket perpendicular to the motherboard. The audio card has connectors, such as audio line-in, line-out, microphone, speaker power and game port. The reference does not describe computing architectures for casino type gaming machine in any manner.

Newtons Telecom Dictionary provides a definition of a UART.

An objective of the present invention is to use a PC-type motherboard in the computing architecture for a casino type gaming machine. The gaming functionality in this computing architecture is provided by a first gaming processing subsystem board that can be plugged into an expansion slot on a “single” motherboard such as a PC-type motherboard in the casino type gaming machine. An advantage of this computing architecture is that costs associated with designing a custom motherboard, which is expensive and time consuming, for the gaming machine can be avoided. Instead, in embodiments of the present invention, a



single “off-the-shelf” PC motherboard can be used with an expansion card to provide a gaming computer for a casino type gaming machine.

The computing architecture of Weiss proposes taking advantage advances in “off-the-shelf” PC motherboards by coupling an interactive multimedia gaming processor 20 which can use an “off-the-shelf” PC motherboard and associated components to a traditional gaming computer 60 via a serial link 30 (see FIG. 1). The traditional gaming computer 60 includes its own main board (“motherboard”) and associated sub-boards (see FIG. 6 which shows all the components of a traditional gaming computer).

Weiss suggests, as PC technology evolves, it can be incorporated into his computing architecture by simply upgrading the interactive gaming processor 20 component of his two computer/two motherboard computing architecture. Nevertheless and contrary to the present invention, in the computing architecture of Weiss, upgrades to the motherboard and its associated sub-boards in the traditional gaming computer 60 (e.g., to use a faster or different type of processor, different bus architecture, etc.) can require a custom redesign of the motherboard which is costly. Weiss does not teach or suggest using a single motherboard, such as common PC-type motherboard, with an expansion card to provide the gaming functionality for a casino type gaming machine. In addition, in the background, Weiss suggests that his two computer/two motherboard architecture, including a traditional gaming computer and a common desktop PC, is necessary because a gaming computer using only a common desktop PC in its associated single motherboard would not be secure. Appellant believes this teaches away from their invention. The Byers reference only describes using an audio expansion card in a common desktop PC and does not teach or suggest anything about providing gaming functionality on an expansion card. Therefore, Appellant believes that the present invention as recited in the remaining claims is patentably distinct over the combination of Weiss and Byers.

### **Detailed Arguments**

The present invention, as recited in independent claim 10, requires a) a motherboard with one or more buses and one or more expansion slots for connecting a board to the buses and b) a first gaming processing subsystem board designed to control a game played on the gaming machine. The first gaming processing subsystem board is connected to one of the buses on the motherboard via one of the expansion slots on the motherboard. As described in claim 20, the motherboard can be a PC-type motherboard. While the Weiss and the Byers

references do describe a gaming processing subsystem, motherboards and expansion cards, an arrangement of components, their connections to one another, the operable functions of each component are quite different from the computing architecture of the present invention. Appellant believes that the present invention is patentably distinct over the combination of Weiss and Byers because the combination suggested by the Examiner does not teach or suggest all of the modifications to the computing architecture described in Weiss that are necessary to arrive at the computing architecture of the present invention. Further, as noted above, Weiss seemingly teaches away from the computing architecture of the present invention.

The Examiner has relied on Weiss et al. patent's disclosure of various gaming machine components. Examiner states,

Weiss discloses all of the instant application without specifically disclosing how the various processing subsystems are connected such as the use of a motherboard with expansion slots and a serial UART.

Then, Examiner, in the office action of December 8, 2004 then recites a number of teachings from Weiss. Examiner states that ***"the Examiner does not see two motherboards disclosed in the specification of Weiss."*** Appellant recognizes that Weiss describes the individual components that are used in the present invention. However, the number of components used in Weiss and their arrangement is quite different then the present invention. In the following paragraphs, Appellant attempts to describe the differences between Weiss and the present invention including Weiss' use of two motherboards.

Weiss describes two processing areas: 1) an open processing area based upon a multimedia PC computer (See generally FIGs. 1 and 7 and Col. 12) and 2) a secure processing area for performing gaming functions (see generally FIGs. 1 and 6 and Col. 11:33-Col. 12:15). Each processing area includes its own motherboard. FIG. 6 of Weiss shows the secure processing area, which includes a main board (i.e., a motherboard). The main board includes a processor and associated components (video expansion board, processor board and memory expansion board). The motherboard is coupled to a backplane board (a separate board that the motherboard can be plugged into). The backplane board provides communication connections to gaming devices and the open processing area (white box 20). This is a typical computing design for a gaming machine (Col. 1: 19-41) and requires a custom designed main board that is compatible with its associated components (e.g., the processor and the video expansion board).

Examiner states "that a computer backplane could be integrally or separately formed on the main board (motherboard)." Thus, Appellant and the Examiner both agree that the

main board shown in FIG. 6 is a “motherboard.” **The main board 164, which a component of a traditional gaming computer, is the first motherboard taught in Weiss.**

In FIG. 7 of Weiss, the open processing area 20 is described as a multimedia PC. As is well known in the computing arts, a multimedia PC includes its own motherboard. In FIG. 7, PC-type architecture is shown including a processor board 252. **Appellant asserts that the processor board 252 is the second motherboard taught in Weiss.** Comparing the functions listed for main board 164 in FIG. 6 and those listed for the processor board 252 in FIG. 7, it seems the functions are quite similar. **Thus, given that 1) a multimedia PC includes its own motherboard, 2) Examiner agrees main board 164 is a motherboard and 3) processor board 252 has similar functions to main board 164, Appellant believes it is reasonable to assert that Weiss teaches a gaming machine using two motherboards: i) main board 164 and ii) processor board 252, which is different than the limitations cited in the present invention.**

Contrary to Examiner’s assertion, Weiss does disclose how the various processing subsystems are connected. Weiss specifies that the communication link (30), between the first processing area and the second processing area, is via the parallel display interface 176 and/or the RS-232 serial interface (178) (FIG. 6 and Col. 11, 64-67). In a PC, these types of interfaces are provided as input/output ports on the back of the PC and provide for a cable connection from the PC to peripheral devices, such as a printer or a display. It is further noted that communicate rates on these types of interfaces are slow and are not designed to handle large amounts of information, i.e., this type of connection is very different from the connection provided by an expansion slot on a motherboard as recited in the present invention.

The present invention, as recited claim 10, requires that a first gaming processing subsystem board to be plugged into an expansion slot on the motherboard. The first gaming processing subsystem board provides gaming functions, such as a game play history, ii) gaming machine access, iii) user interface devices, iv) money handling devices, v) gaming machine I/O communications, v) random number generation and vi) progressive jackpot information. The motherboard provides general functions, such as i) visual displays, ii) attraction animation features, iii) audio player feedback, iv) real-time video presentations, v) and operating system and combinations thereof.

In contrast, Weiss describes, a secure processing area that provides gaming functions. The main board, which is a motherboard, includes its own busses, RAM/ROM memory and expansion slots for a processor board, video expansion board, memory expansion board and other circuitry (e.g., a system event controller, a random number generator, a win decoder/paytable, status indicators, a communications handler and a display/sound generator Col. 11:40-45). The motherboard is plugged into or integrally formed with a separate backplane board. Typically, in a gaming machine, the backplane is mounted on a vertical

“backplane surface” of a gaming machine cabinet and the main board, providing the gaming functions, is plugged into the backplane, such that it is parallel to the base of the gaming machine and perpendicular to the backplane.

In traditional gaming machines, the backplane provides communications to other peripheral devices. In Weiss, the backplane is described with functionality of a traditional gaming machine. For instance, the backplane board provides a cable connection to a separate multimedia PC, which is the open processing area for providing general functions and includes 8 communication ports. As described above, the separate multimedia PC includes its own motherboard.

It is clear that Weiss does not teach a first gaming processing subsystem board designed to control a game played on the gaming machine and designed to be plugged into an expansion slot on a motherboard. As Weiss describes, the main board, which provides the gaming functions as the secure processing area, is plugged into the backplane and not an expansion slot on the motherboard as the present invention requires.

Essentially, Weiss provides two computers with two motherboards that are capable of functioning independently. The two computers duplicate many of the same functions. For instance, in Weiss, both processing areas are described as providing a video card, a sound card, RAM, a processor and communication capabilities that are coupled to or located on a main board with busses. Further, each of these computing areas could be used to display and generate a game independent of one another if the two computing areas were not linked.

To allow the secure processing area of Weiss to be plugged into an expansion slot on the motherboard of its open processing area, in a manner that is required in the present invention, the secure processing area would have to be totally redesigned. One could visualize this design effort as being akin to designing one PC computer to fit in an expansion slot of a second PC computer. For example, the main board of the secure processing area would have to be shrunk in size to fit into the expansion slot in the motherboard of the open processing area. As is well known in the PC arts, expansion cards for motherboards are typically much smaller in area than the motherboard. The shrinking of the main board of the secure processing area would require a new layout design for all of its circuitry to fit on the smaller board. Further, a new bus interface and bus compatibility circuitry would have to be added to allow the redesigned main board to couple to the motherboard in open processing area and communicate over one of the busses on the motherboard. Further, the video expansion board, processor board and memory expansion board would likely have to be integrated into the redesigned main board to allow it to fit into an expansion slot on the motherboard i.e., to formulate the redesigned main board as an expansion card rather than a motherboard with various expansion cards projecting from it.

In addition, since the redesigned main board would no longer be plugged into the backplane, a new communications connection scheme would have to be devised and added to

the redesigned main board and/or the processing board on the motherboard in the open processing area of Weiss to allow the redesigned main board to communicate with its various gaming devices, such as slot reels, touch screens, bill validators, etc (see FIG. 6). The current main board design of the secure processing area routes all of its communications through its interface with the back plane. The motherboard of the open processing area in Weiss (FIG. 7) does not provide connections to backplane or the gaming devices shown in FIG. 6. Thus, if placed directly on the motherboard, a new communication interface/architecture would be needed.

Some advantages of the present invention, which uses a board connected to an expansion slot on a motherboard, as compared to using two separate computers connected by a cable connection as described in Weiss is the present invention requires less hardware. For example, Weiss describes two motherboards and associated their associated boards while the present invention describes a motherboard and board connected to it via an expansion slot. In addition, Weiss describes the use of two video cards and two sound cards one for each motherboard. Further, Weiss's design takes up much more space in the gaming machine cabinet, which is at a premium in gaming machine design, since basically two separate computers must be accommodated while the present invention essentially requires space for a single computer.

The Examiner does not describe motivation for the modifications in Weiss that would enable the secure processing area to be embodied on an expansion board that could be plugged into an expansion slot on the motherboard of the open processing area as required in the present claims. The Examiner states in the office action of December 8, 2004:

**Column 12 lines 30-35 discloses that the processor board also peripherals in the form of, for example, hard drivers, CD ROMS, network interfaces, *sound cards, and other desirable peripherals for game enhancement and patron entertainment* (emphasis added by Examiner). This statement provides adequate motivation to an Examiner to find the expected results of a processor board attached to a motherboard to allow a peripheral "card" to be jacked in an expansion slot to provide game enhancement and patron entertainment.**

**Column 12 lines 30-35 discloses that the processor board also peripherals in the form of, for example, hard drivers, CD ROMS, network interfaces, *sound cards, and other desirable peripherals for game enhancement and patron entertainment* (emphasis added by Examiner). In an analogous, invention to Byers et al teaches that it is known to attach to a motherboard Industry Standard Architecture (ISA) expansion cards that connect the computer electronics to the peripheral device. With respect to claim 16, a PCI expansion card meets**

the definition of an ISA expansion card. Therefore, it would be obvious to one of ordinary skill art at the time of the invention to have a PC computer with a motherboard capable of accepting cards using the motivation provided by Weiss that a computer backplane could be integrally or separately formed on the main board (motherboard) and that other that the other desired peripherals for game enhancement and patron entertainment could be added to the main board.

Weiss specifically states that “in use and operation, and referring to FIG. 6, the secure processing area 60 includes a processor board 162, a main board 164 and a back plane 166 integrally or separately formed (Col. 11, 33-36).” The secure processing area 60 in Weiss provides the gaming functionality for the gaming machine. In the present invention, the gaming functionality is provided on “a first gaming processing subsystem board connected to one of the buses on the motherboard via an expansion slot.” Appellant does not see how combining all of the functions of a motherboard, processor board and backplane into a single forms or separate forms provides the motivation to provide these functions on an expansion card that can be plugged into a motherboard. Even if this engineering is possible and the references cited in the reference suggested performing such modifications, which Appellant believes they do not, one would end up with an expansion card with the functions of a motherboard, a processor board and back plane plugged into another motherboard. **This modification, proposed by the Examiner would result in the use of two motherboards while the present invention recites use of a “single motherboard.” Thus, Appellant believes the modifications suggested by the Examiner via the combination of references does not render the invention as recited in the remaining claims obvious.**

The motivation, supplied by the Examiner, that a number of components can be integrally formed does not teach that these components can be integrally formed on an expansion card that can be plugged into a motherboard. Further, Weiss teaches that the two computing systems (60 and 20) are connected by a serial link 30 (FIGs. 1 and 6) and not via an expansion slot on a motherboard. Thus, to justify the rejection, the Examiner appears to be relying on the level of one of skill of the art to fill in missing elements from the prior art. Assuming for the sake of argument that the level of skill in this art, as posited by the Examiner, allows one to use the teachings of Weiss to connect the various processing subsystems in the manner as the Examiner has described, this does not change the fact that the burden is not on the Appellants to give reasons why something is *not* obvious to those of skill in the art. As is well understood, obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art to which the patent pertains. See 35 U.S.C. §103(a). This legal construct also presumes that all prior art references in the field of

the invention are available to this hypothetical skilled artisan. See *In re Rouffet*, 47 USPQ2d 1453 (Fed. Cir. 1998); *In re Carlson*, 25 USPQ2d 1207, 1211 (Fed. Cir. 1993).

Just because the necessary knowledge or common sense *may* have been within the province of the ordinary artisan does not in and of itself make it so, absent clear and convincing evidence of such knowledge. *Smiths Industries Medical Systems, Inc. v. Vital Signs, Inc.*, 50 USPQ2d 1641 (Fed. Cir. 1999); See also *C.R. Bard, Inc. v. M3 Sys., Inc.*, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 227 USPQ 657, 667 (Fed. Cir. 1985).

Regardless of the capabilities of the hypothetical person of skill in the art, the Examiner must identify the specific principles that would lead one of skill to supply the missing elements. This the Examiner has not done. The law requires that when an examiner relies on the level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, that examiner must explain what “specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the invention.” See *Rouffet* at 1458.

In *Al-Site Corporation and Magnivision, Inc. v. VSI International, Inc.*, 50 USPQ2d 1161 (Fed. Cir. 1999), the Federal Circuit discussed in the detail the interplay of level of skill in the art and missing elements of a claim:

The level of skill in the art is a prism or lens through which [a claim reviewer] views the prior art and the claimed invention. This reference point prevents these deciders from using their own insight or, worse yet, hindsight, to gauge obviousness. Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment. See *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 220 USPQ 303, 312-13 (Fed.Cir.1983) (“To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”). Skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies the primary guarantee of objectivity in the process. See *Ryko Mfg. Co. v. Nu-Star, Inc.*, 21 USPQ2d 1053, 1057 (Fed.Cir.1991).

The Federal Circuit also cautioned that if a “rote invocation” of the level of skill in the field

could suffice to supply a motivation to [find obviousness], the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, [an Examiner] could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. Rather, the Examiner and the Board must safeguard against hindsight

analysis and rote application of the legal test for obviousness. *Rouffet* at 1458.

Importantly, it is only a rare case when the level of skill in the art can operate to supply missing claim elements. Here, the Examiner has provided no evidence showing what specific understanding would lead one of skill in the art to perform the modifications in Weiss to provide a first gaming processing subsystem board designed to control a game played on the gaming machine and designed to be plugged into an expansion slot on a motherboard as is recited in the pending claims.

The Byers reference teaches the use of an audio expansion card on a motherboard. It does not describe gaming in any manner or how to combine the functions of different boards, such as a motherboard and a processor board onto an expansion card. More specifically, this reference does not show is how to connect the gaming computer of Weiss that includes a processor board, main board (motherboard) and backplane into an expansion slot on a PC motherboard, such as a PCI expansion slot, or how to redesign gaming computer of Weiss to fit onto a PCI card that can be plugged into a PC motherboard. As described above, Appellant asserts that Weiss does not provide motivation for the modifications suggested by the Examiner. Thus, Appellant asserts the combination of Weiss and Byers can't be said to teach or suggest the modifications necessary to arrive at the invention as recited in claim 10.

### **Teaching away from present invention in Weiss**

Another reason that the present invention as recited in the pending claims is a patentably distinct and non-obvious improvement over Weiss and Byers references, is that Weiss teaches away from the present invention. From Col. 1, line 46-Col. 2, line 35, Weiss enumerates many reasons for not using a PC based design for a gaming machine such as described in the present invention recited in the pending claims. Weiss explains that

Today's trend in gaming devices is towards an increasing utilization of personal computer based gaming platforms. Personal computer based platforms are being employed by designers to make use of real time operating systems which allow for multi-threaded/multi-tasking processes and the use of many "off the shelf" device drivers. **While at first, this may seem an advantage, it is not a wise choice in an environment requiring high security and regulatory monitoring. Designs of this nature elude validation by regulatory authorities in two areas, initial laboratory evaluation and field validation.** Emphasis added.



Gaming machines are subject to significant regulatory overview in a large number of jurisdictions in regards to hardware and software. For instance, approval of hardware used to generate the game of chance typically requires two-three years before it can be deployed in the field.

Weiss further states,

Any in depth review of a PC based gaming device is both difficult and far from definitive, requiring tremendous engineering resources and specialist in computer security which are expensive and normally available only on a consultant basis. Even if these resources were available, **it is impossible to study the hundreds of thousands of lines of source code comprising all of the elements of such a system.** Emphasis added.

Weiss suggests that it would be impossible to dissect the code of an operating system that is used on PC based device to degree that would satisfy the regulators. One of the potential functions of the motherboard, which can be PC based, as recited in claims 10 and 20 is to control and operate an operating system.

Weiss further states,

In addition, the time involved in just learning how to build the executable code from the source for correlation is time and resource prohibited. The multi-threaded/multi-tasking process nature of the programs in these devices make it extremely difficult to locate any compromising code which becomes clandestine since the actual sequence of the execution is hidden to the evaluating engineer. Furthermore, the code set for a complex PC device may not be fully embraced by the evaluating engineer. The significant reduction of risk for detection in compromising the more complex code is an invitation to inside compromise by device designers.

Gaming machines are designed to be field verifiable. As an example, gaming software is stored on a read-only memory that is tested by a technician certified by a gaming jurisdiction prior to its installation on a gaming machine. Weiss enumerates reasons why a PC-based design may be field verifiable. Weiss states, **“PC based devices are simply not field verifiable, rendering any gaming jurisdiction's device inspection program or any other field validation effort useless for this gaming equipment** (Emphasis added).” Thus, Applicant believes Weiss teaches away from the present invention.

Accordingly, it is respectfully submitted that claim 10 is patentable over the cited art. Claims 15, 20, 21 and 24 each depend directly or indirectly from claim 1 and are therefore patentable for at least the reasons that claim 10 is patentable over the art.

## **2. Dependent claim 11**

Claim 11 depends directly from independent claim 10, and is therefore submitted to be patentable over Weiss and Byers for at least the reasons set forth above with respect to claim 10. Claim 11 additionally recites a second gaming processing subsystem board. The second gaming subsystem processor board can also be connected to the motherboard via one its expansion slots. Weiss and Byers, alone or in combination, do not teach or suggest a first processing subsystem board and a second processing subsystem board designed to control the gaming machine and to control Input/Output to the gaming machine connected to a motherboard comprising 1) a first processor; 2) a memory wherein the first processor and the memory are designed or configured to control and operate one or more of i) visual displays, ii) attraction animation features, iii) audio player feedback, iv) real-time video presentations, v) and operating system and combinations thereof; 3) one or more buses on the more on the motherboard; 4) one or more expansion slots for connecting a board to the bus. Accordingly, it is respectfully submitted that claim 11 is patentable over the cited art.

## **3. Dependent claim 16**

Claim 16 requires all limitations of claim 10. Therefore, it is patentable over the cited art for at least the reasons presented above. Claim 16 additionally recites the gaming processor subsystem board is a PCI expansion card designed to interface with a PCI bus on the motherboard. Byers teaches a motherboard with an audio expansion card on an ISA bus. Weiss teaches a serial RS-232 connection or a PDI cable connection between the main board providing gaming functions and the motherboard of the PC. This connection scheme in Weiss is very slow compared to a PCI bus and limits the functionality of the design described by Weiss. An RS-232 cable connection or a PDI cable connection provides communications speeds in range of a few kilobytes per second as compared to 132 megabytes per second of a PCI bus. Further, a PCI card is much smaller than the main board and its associated expansion boards described for the secure processing areas in Weiss. The combination of Weiss and Byers do not teach or suggest using a PCI expansion card that allows for a high-speed connection between its secure processing area and its open processing area or any teaching or motivation to shrink the size of boards comprising its secure processing area. Accordingly, it is respectfully submitted that claim 16 is patentable over the cited art.

**B) The rejection of claims 22 and 23 under 35 U.S.C. §103(a)**

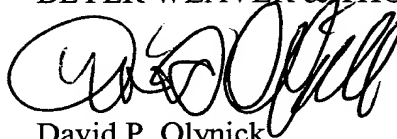
Claims 22 and 23 require all limitations of claim 10. Newtons Telecom dictionary page 751 simply provides a definition of a UART. Therefore, Applicant assert that claims 22 and 23 are patentable over the cited art for at least the reasons presented above in regards to the patentability of claim 10. Accordingly, it is respectfully submitted that claims 22 and 23 are patentable over the combination of Weiss, Byers and Newton.

**C) Conclusion**

Regarding all the rejections, the cited references are insufficient to render the claims prima facie obvious because there is no motivation for one of ordinary skill in the art to redesign the separate gaming computers in Weiss as an expansion card for a PC motherboard as described in the present invention. In particular, the prior art references do not suggest a PCI expansion card that is compatible with a PC motherboard as is described in the present invention. Further, the Weiss reference seemingly teaches away from the PC-based computing architecture of the present invention.

In view of the foregoing, it is respectfully submitted that none of the pending claims are rendered unpatentable by the patent to Weiss and the Microsoft and Newtons references. Accordingly, the pending rejections of all of the claims under 35 U.S.C. § 103 should be reversed.

Respectfully Submitted,  
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## VIII. CLAIMS APPENDIX

### CLAIMS ON APPEAL

Claims 1.-9. Cancelled

10. (Previously Presented) A gaming machine comprising:
- a housing;
  - a user input connected to the housing;
  - a display connected to the housing; and
  - a control system located within the housing, the control system comprising a processing platform that comprises:
    - a mother board, said motherboard comprising;
      - a first processor;
      - a memory wherein the first processor and the memory are designed or configured to control and operate one or more of i) visual displays, ii) attraction animation features, iii) audio player feedback, iv) real-time video presentations, v) and operating system and combinations thereof;
      - one or more buses on the more on the motherboard wherein each of the one or more buses uses an interface protocol selected from a group consisting of peripheral component interconnect (PCI), industrial standard architecture (ISA), Versa Module Europa (VME), and accelerated graphics port (AGP);
      - one or more expansion slots for connecting a board to the buses;
    - a gaming processing subsystem designed to control a game played on the gaming machine, the gaming processing subsystem comprising,
      - a first gaming processing subsystem board connected to one of the buses on the motherboard, the first gaming processing subsystem board comprising;
        - a second processor designed or configured to control the gaming machine and to control Input/Output to the gaming machine;
        - a non-volatile memory for storing at least payout information;

a data memory socket located on the first gaming processing subsystem board designed to accommodate a data prom; and

a bus interface for connecting the first gaming processing subsystem board to one of the buses via one of the expansion slots on the motherboard

wherein the first gaming processing subsystem board is designed to control one or more of: i) a game play history, ii) gaming machine access, iii) user interface devices, iv) money handling devices, v) gaming machine I/O communications, v) random number generation and vi) progressive jackpot information.

11. (Previously Presented) The gaming machine of claim 10, further comprising:  
a second gaming processing subsystem board wherein the first gaming processing subsystem board is designed to control one or more of: i) a game play history, ii) gaming machine access, iii) user interface devices, iv) money handling devices, v) gaming machine I/O communications, v) random number generation and vi) progressive jackpot information..

12.-14. Cancelled.

15. (Previously Presented) The gaming machine of claim 10, further comprising:  
a serial communication connection.

16. (Previously Presented) The gaming machine of claim 10, wherein the gaming processor subsystem board is a PCI expansion card designed to interface with a PCI bus.

17.-19. Cancelled.

20. (Previously Presented) The gaming machine of claim 10, wherein the processing platform employs a personal computer processor architecture.

21. (Previously Presented) The gaming machine of claim 10, wherein the first processor on the mother board and the first gaming processing subsystem board communicate using a software driven application program interface.

22. (Previously Presented) The gaming machine of claim 10, wherein the first gaming processing subsystem board further comprises:  
a serial UART (Universal Asynchronous Receiver/Transmitter).

23. (Previously Presented) The gaming machine of claim 22, wherein the serial UART is used by the first gaming processing subsystem board to communicate with internal gaming devices, external gaming devices and combinations thereof.

24. (Previously Presented) The gaming machine of claim 10, wherein the first processing subsystem board further comprises:  
a random number generator.